Table of Contents

Preface, Committees and Reviewers

Chapter 1: Nanotechnology and Industry Application	
Environment Risk Characteristics and Preventive Measures on Carbon Disulfide J.H. Zhou, B. Wang, X.B. Zhou and J. Zhang	1
Applications and Development of Nanotechnology in Machinery Industry X.Z. Feng, A.M. Liu and J.W. Cheng	5
Traffic Service Level Evaluation and Analysis for Urban Expressway Q. Liu, Y. Luo and H. Li	11
Safety Evaluation of Highway Alignment Design Based on Grey Target Theory H. Li and Y. Luo	17
Synthesis of Fluoro-Containing Superhydrophobic Cotton Fabric with Washing Resistant Property Using Nano-SiO ₂ Sol-Gel Method L.F. Hao, Q.F. An, W. Xu and Q.J. Wang	23
Optimization of Electronic Nose Sensor Array and its Application in the Classification of Vinegar	
H. Men, H.Y. Liu, L. Wang and X. Zhou	27
Signal Integrity of Power and Ground Plane Related to Vias in High Speed Embed System Board Design	22
W.L. Zhu, J.Q. Chen, L.P. Liao and W.X. Chen Programs Fluctuation Paged on Cascada Convolution Algorithm in Duoft Tule	33
Pressure Fluctuation Based on Cascade Correlation Algorithm in Draft Tube L.Y. Wang and W.G. Zhao	38
Forecasting Groundwater Level Based on Relevance Vector Machine L.Y. Wang and W.G. Zhao	43
A Numerical Simulation of Hybrid Finite Analytic Method for Groundwater Pollution C.J. Zhu, L.P. Wu and S. Li	48
On the Oriented Growth and Optical Property of ZnO Thin Films Deposited on NaCl (001) Substrate by Ion Beam Sputtering S.W. Mao, J.H. Shen, D.S. Gan, H.L. Huang and S.W. Yeh	52
Intrusion Detection Mechanisms Based on Queuing Theory in Remote Distribution Sensor Networks	
H.Y. Lin and T.C. Chiang	58
A Knowledge Cognition and Ontology Based E-Learning System L.L. Fu, H.Y. Wu and G.Z. Wang	64
Dynamic Optimum of the MEMS Micro-Deformable Mirror for Food Safety Detection Y.J. Gong, Z. Fu, H.Y. Xiang, L. Zhang and C.L. Meng	69
Modeling and Simulation on Ship Power Station under Large Disturbance Y.C. Liu and C. Wang	74
Network Security Risk Assessment Method Research Based on Fuzzy Analytic Hierarchy Process	
Z. Yu, X. Xu and X.J. Wu Accurate SER Estimation by Transform Matrix Analysis for Fault Tolerant Circuits Design	80
C.H. Yu Study on Maximum Power Point Tracking for Grid-Connected Photovoltaic System	87
H.S. Zhang	93
Power Dissipation Analysis of Adiabatic Circuits and Active Leakage Power Estimation in Nanometer CMOS Processes W.Q. Zhang, L. Su, L.F. Ye and J.P. Hu	97
Evaluation Method to Determine Perpendicular Error of Spindle Units Using	71
Transformation Matrix Z.Y. Qu and Z.M. Ye	103
Perpendicular Error Calibration of Simulation Turntable Using Transformation Matrix Z.Y. Qu and Z.M. Ye	107

The Automatic Classification of ECG Based on BP Neural Network L.L. Yu, B.X. Tan and T.X. Meng	111
Design of a Permanent Magnet Synchronous Generator for Vehicle Application Q.J. Du, L.L. Ba and C. Sun	117
Local Saddle Points Theory of a New Augmented Lagrangians W.L. Zhao, J. Zhang and J.C. Zhou	123
The Judgement for Generalized Positive Definite Matrices in Signal Processing X.T. Liu	128
A New Method for Stochastic Mathematical Programs with Equilibrium Constraints W.L. Zhao, S.Q. Ge and J.C. Zhou	133
Predicting the Diameter of Polyamide Superfine Fiber of Nonwoven Fabrics T. Chen, M. Sun and L.L. Wu	138
A Novel Scheduling Approach to Waste Minimization in Process Industry X.Q. Zhao	143
An Adiabatic Register Based on Dual Threshold Leakage Reduction Technique J.P. Hu, X.Y. Yu and X.L. Sheng	148
Real-Time Simulation of Tissue Cutting with CUDA Based on GPGPU Z.Y. Yuan, Y.H. Ding, Y.Y. Zhang and J.H. Zhao	154
Influence of Construction Procedures on the Liner and Stress of a PC Continuous Beam Bridge	1.60
H. Cheng and G. Xuan Development of the Measurement and Analysis System of Nanoparticles Size Distribution	162
Z.M. Li, W.G. Li, J. Shen and W. Liu The Analysis System of Ultrafine Particles Dynamic Light Scattering Signals Based on B/S	168
Mode Z.M. Li, J. Shen, W. Liu and W.G. Li	172
GPU-Based 3D Cellular Surface Texture Relighting L. Jin, J.Y. Dong and P. Ji	177
Applying Real-Valued Genetic Algorithm on Curve Fitting Problem H.J. Chen and H.E. Chueh	183
A Two-Component Gas Analyzer Based on Self-Sustaining Dark Discharge Carbon Nanotube Film Cathode Gas Sensor J.P. Lin and J.H. Liu	188
A Data Fusion Optimization Method Based on GA and PSO	192
Research on Data Storage Structure and Management Model in Hierarchical Storage Y. Chun, S.X. Li and Y.Z. Li	198
A Fast Algorithm for the Inverse of a Class of Tridiagonal Period Matrices in Signal Processing	
C.D. Dong	204
Design and Implementation of the Automatic Search and Price-Comparison System Based on the Deep Web P.G. Lin, S.Y. Zhou and L. Zhao	209
The Novel Methods of Software Architecture Based on the UML and B Methods S. Zhou, R.H. Zhang and Y. Zhong	215
Edge Based Level Set with Gaussian Filtering Regularized and its Application in Liver Segmentation	213
R.J. Feng and H.Y. Jiang	222
Development and Research on Embedded Fieldbus Protocol Conversion Gateway H. Zhang, G.H. Lou, J.Z. Yang and Z. Yao	228
A Pipeline Approach for Component Composition H.J. Ma, X.B. Zhou and X.J. Yang	232
Research on Core Competence of Corporation Based on Intellectual Capital L.G. Yao and Z.L. Dong	237
Simulation for Building Fault Swatches for Reciprocating Compressor R.L. Lin and B.Y. Liu	243
Research on Economical Evaluation for Disseminating Nanomaterials Based on Sustainable Development	2.10
E.Z. Li, C.L. Liu and J.M. Liao	249

Chapter 2: Computer Science and Engineering	
Zero-Watermark Resistant to MP3 Compression J.L. Zuo and D.L. Cui	254
Characteristics Based Adaptive Weighting Method in Ontology Mapping L. Zhang and Y.H. Zhao	260
A New Artificial Immune Algorithm for Flexible Job-Shop Scheduling L. Hong	266
Neural Networks Application in NC Machine Reliability Researching H.B. Zhang, Z.X. Jia and A.M. Xi	271
Decision Making Based on Rough Set Theory and Weight Value E. Xu, L.S. Shao, F. Yang, T. Qu and X.C. Gu	275
Leakage Reduction of Improved CAL Registers Using MTCMOS Power-Gating Scheme in Nanometer CMOS Processes J.G. Zhu and J.P. Hu	281
A Framework for Handling with Web Services Exception C.C. Liu	287
Manufacturing Information Recommendation Model Based on Pattern Mining Y. Feng, D.S. Liu, C.H. Ju and H. Tian	294
Research on Expanded Critical Path Algorithm and its Application G.L. Chen	300
Research on Extreme Points Optimizing of Nonlinear Multi-Peak Function Based on Genetic Algorithm L.G. Yang	304
Research on the Application of Improved Association Rule Algorithm in Supply Chain Management	200
F. Jiang, J. Zhao and H.L. Ge Research on Evaluation of Economics of Product Quality Based on Fuzzy Theory	309
X.J. Wen A Kind of Watershed Image Segmentation Method Based on Combination Pre-Processing J.X. Wang, L.X. Liu and X.Z. Li	314 320
A Parallel Algorithm of Image Processing Model W. Feng and G.Z. Cheng	325
The Novel Routing Algorithms Based on ACO and GAs R.H. Zhang and S. Zhou	329
SHRDIS: A Semantic-Based Heterogeneous Relational Data Integration System J.P. Wang, Y.F. Zhang, J.J. Lu and Z. Miao	335
A Study on GM(1,N) Model for Teaching Evaluation C.J. Zhu and B. Wang	341
Haar Wavelets in Data Analysis Y.Q. Sun, Y.T. Jiang and Y.G. Tian	346
Classic Methods of Face Recognition H.Y. Zhang and X.W. Li	350
Research and Application of a Hidden Line Removal Algorithm of Digital Mine X.D. Du and S.H. Feng	354
Screening Model in Enterprise Competitive Intelligence Activity H.D. Yu, F. Liu and Y.F. Luo	360
Development of the Mine Production Management Information System D.Z. Wang, G. Song, S. Wang and J.Y. Gan	364
Application of Thermal Infrared Imagery in Human Action Recognition J.F. Li and W.G. Gong	368
A Novel Multi-Focus Image Fusion Method Using Shearlet Transform J. Zhao, L. Lü and H. Sun	373
Evaluation Method Research on the Interior Design Based on M (1 2 3) X.X. Geng and Y.C. Wang	379

Evaluation Method Research of the Art Design Teaching Based AHP $X.X.\ Geng\ and\ Y.C.\ Wang$

Two-Dimensional Locality Discriminant Preserving Projections for Face Recognition Q.R. Zhang and Z.S. He	391
Speech Algorithm for Watermarking Relational Databases Based on Weighted Y.H. Zhang, Z.X. Gao and D.X. Yu	399
A Design of an Embedded System for Neural Machine Interface of Artificial Legs	405
Comment on the Progress and Research of the Digitization of Chinese Ancient Books Z.G. Ji, Z.H. Wang and H.Z. Xie	411
Vehicle Classification and Tracking Based on Particle Swarm Optimization and Meanshift B. Li, Z.Y. Zeng and J.X. Chen	417
Attack Algorithm on Watermarking with Public Watermark Detection Y.J. Hu, L. Yang, X.D. Cao and G.J. Wang	423
A Comprehensive Reputation Based Trust Model in C2C Electronic Commerce J.M. Wang, L. Wang and J. Xie	429
Semi-Automatic Liver Segmentation Using Improved GVF Snake Model H.Y. Jiang and X.H. Gao	435
The Analysis and Design of Hospital Information System Based on UML Model Q.Z. Chen, J. Chen and Y.M. Yu	441
Research on Intelligent Recommendation Method and its Application on Internet Bookstore Q.Z. Chen, Y.J. Pei, Y. Jin and L.Y. Zhang	447
A Fast BP Algorithm and its Application in China Stock Market S.H. Chen	453
A Multiphase Level Set Method Based on Total Variation Density Estimation for Image	
Classification Y. Yang, L.C. Sui and Y. Lin	458
A Proof Method for Correctness of Database Query Program B. Yang	464
Parameters Optimization in SVM Based-On Ant Colony Optimization Algorithm X.Y. Liu, H.Y. Jiang and F.Z. Tang	470
Study on Medical Micro-Image Mosaic with SIFT Features Y.G. Wang, G.Y. Jiang and M. Yu	476
A Network Intrusion Detection Method Inspired by Biological Immunology R. Deng and X.Y. Zhang	482
A Negative Selection Algorithm Based on Hierarchical Clustering of Self Set W. Chen, T. Li, X.J. Liu and Y.Q. Shi	486
A Meme-Gene Co-Evolution Algorithm for the Image-Matching Question G.X. Sun, Z.P. Peng and D.L. Cui	490
Improving the Performance of Language Identification System Using Different GMM- Training Approaches	406
W. Li, D.J. Kim and K.S. Hong Picinformatics Analysis of Lagrange (Lagran) in Propagations	496
Bioinformatics Analysis of Laccase (Lac1) in <i>Pycnoporus cinnabarinus</i> H. Li, G.Y. Zhou, H.Y. Zhang and L. Guo Demonsio Modeling of Tree Counth in a Nangary Creenbarge Using MATI AB and Simplinia	502
Dynamic Modeling of Tree Growth in a Nursery Greenhouse Using MATLAB and Simulink Z.D. Yang and Y. Bai	507
Research of Evaluation Indicators about Electric Power Enterprise Marketing H.R. Cui and Z.W. Xuan	512
Design and Development of Database System for Astronauts' Dietary in Space Permanent Base	<i>5</i> 10
S.N. Wang, E.Z. Hu and M. Zhao Study on OWL-Based Construction and Inference Method of Vegetable Products Ontology	519
L.Q. Wu, M. Zhao and J. Liu	523
Research on Distributed Intrusion Detection Model Based on Information Fusion P. Du and W. Xu	528
Performance Assessment for Distributed Information Fusion System Based on Data Mining Y.S. He and H.L. Wang	534
Improvement of Apriori Algorithm Based on the User Interest and the Importance of Itemsets	
Y.S. He and X. Li	540

E-Government Knowledge Navigation Based on Topic Maps J. Zhai, Y.M. Song and J.F. Li	546
Assessment Model of Corporate Governance with COBIT-Based IT Governance J. Chen and L.P. Shen	550
A Implement of Access Control Based Multi-Polices Using XML T. Peng, M.H. Jiang and M. Hu	558
Image Segmentation Based on Contextual Label Tree for Retrieval G.Q. Yuan and H.S. Liu	563
Construction of Energy Internet System and Research on its Key Problems C.H. Zhao, Y. Sun and K.J. Li	569
Application of BP Neural Network into the Kow of Chemical Contaminants H.Y. Jiang, M. Dong and W. Li	574
The Basic Tacit Knowledge Acquisition Model of Industrial Organization and its SD Simulation M.L. Wei and T. Feng.	570
M.L. Wei and T. Feng Using Cumulative Histogram Maps in an Adaptive Color-Based Particle Filter for Real- Time Object Tracking	579
S.L. Zhao, S.Z. Wang, H.J. Lee and H.I. Pai	585
A Data Mining System Based on the Web Services Technology X.Q. Zhou and J.X. Sun	591
Traffic Sign Recognition Based on SIFT Features N.A. Cai, W.Z. Liang, S.Q. Xu and F.Z. Li	596
Study on the Normalization for Internet Computing and Modeling of Conceptual Model	270
XML-Based W. Qiu	600
Weighted LS-SVM Method for Building Cooling Load Prediction X.M. Li, J.S. Chen and L.X. Ding	606
Chapter 3: Communication and Management	
RETRACTED: Application of Object-Oriented Languages and Private Principles of	
Steganography in Deconstructing Local-Area Networks Z.M. Qu	613
Dynamic Propagation Model of Blue-Tooth Virus on Smart Phones X.Y. Huang, C. Jin and S.L. Jin	620
The Data Fusion for MIMO Radar J.K. Zeng and Z.M. Dong	627
A Simulation System for MIMO Radar J.K. Zeng and Z.M. Dong	633
Mechanism of a Resource Location Approach in Power-Law Networks J. Li and Q.Y. Han	640
Parameter-Induced Stochastic Resonance in Wireless Sensor Network Signal Processing Z.K. Zhao and G.H. Hui	646
Study Routing Metrics Based on OPRM for Wireless Sensor Networks Y. Ding	651
A Rendezvous-Location Based Multicast Secure Communication in Ad Hoc Networks T.C. Chiang, H.Y. Lin and J.L. Chang	657
Fast and Low-Complexity Frame-Level Synchronization for Direct-Sequence Transmitted Reference Receivers N. Miao and Z.Z. Zhao	663
Research on the Resource Allocation Model for the Satellite Constellation Communication System	
L.L. Zhu and Y.F. Duan	669
A Network-Friendly Architecture for Multi-View Video Coding (MVC) L.H. Wang, M. Xi, D.X. Li and M. Zhang	678
Fast Algorithm for the Inverse Matrices of Adding Element Tridiagonal Periodic Matrices in Signal Processing Y.L. Zhao and X.T. Liu	682

The Applications of Distributed Embedded System Based on Multi-FPGA in Real Time Video	687
The Study on Protection Algorithms in Multi-Domain Optical Networks X.Y. Li, G.H. Gao, G.Y. Miao and S.T. Yan	693
The Safety Control of Computer Systems and Networks Based on Adaptive Approach X.Y. Li, J.H. Fu, G.H. Gao and S.Y. Li	699
The Fidelity of the Digitization of Chinese Ancient Books Z.G. Ji, Z.H. Wang and H.Z. Xie	705
Safety on Food Supply Chain Game Basing on Profit Distribution K. Zhang, H.F. Qi and C.H. Shi	710
Research of the Collaborative Filtering Algorithm for E-Commerce Y. Luo	717
Research on OpenLS-Based Mobile Location Service Platform C.J. Zhang, Z.X. Wang and Y.J. Yang	722
The 2 High Horizontal Man Sportsman Run-Up Final Step Sport Credits of Long Jump of Horizontal Speed Loss Reason H.Y. Lou and G.Z. Wang	728
Study on HSE Management of Our Construction Enterprise L. Ming	733
Study of Backoff Algorithm in Broadband Power Line Networks C.L. Ji and Q. Sun	739
Design of Phase Shift Signal Generator G.H. Xiong, X.J. Gao and L.L. Zeng	745
Unscented Kalman Filter for DR/GPS Integrated Navigation System Y.Q. Han, J.B. Chen, Z.D. Liu, D.H. Zhao, C.L. Song and J.Y. Yin	750
An Economic Analysis of Photovoltaic Industry T. Ye	756
Uncertainty Description of GIS Attribute Data in Hierarchical Approximate Space W.H. Liao	760
The Best Number of IGS Stations by Grouping Network for Solving Total Zenith Delay Y.C. Yue, Z.C. Zhang and P. Xiong	764
The Dynamic Effect of the Top Management Support and Departmental Manager Knowledge on IT Application Maturity M.H. Huang	769
Evaluation of Enterprise Technical Innovation Capacity Based on Interval Number and Entropy Method	
H.R. Čui	775
Chapter 4: Control and Automation	
Study on Noise Monitoring and Evaluation of Boiler Room J.H. Zhou and B. Wang	782
Research on Networked Agriculture Greenhouses Irrigation Control System F.M. Tian, G.Q. Xi and X.L. Wang	787
Research on Route Optimization of Dynamic Random Network Based on Genetic Algorithm	
C.L. Zhang	792
Research on Color Control for Color Scanner X.W. Li	797
A Replica Selection Decision in Cloud Computing Environment J. Li	801
Research of Machine Vision System about Robot Soccer Based on the HSV S.R. Lu and H.L. Guo	807
Rolling Bearing Fault Diagnosis Based on Wavelet Packet Feature Entropy-MFSVM W.G. Zhao and L.Y. Wang	813
Fault Diagnosis of Power Transformer Based on DDAG-SVM W.G. Zhao and L.Y. Wang	819

Modeling Knowledge Employee's Turnover Based on P-SVM Y. Zhao and Y.Z. Liu	825
Modal Analysis of the Cable-Stayed Space Truss Combining ANSYS and MSC.ADAMS J.J. Zhang, J.T. Zhong, L.L. He and R.Z. Gao	832
Research on Robot Pose Control System Based on MMA7455 Y.X. Han, C.H. Shi, Y.G. Gu and X.F. Zhao	838
Booth Array Multiplier Based on Adiabatic Computing H. Li, L.F. Ye and J.P. Hu	843
The Research for Extension Software Data Structure X.M. Wu, H.M. Guo and Y.Q. Yu	849
Retrieval Oriented Robust Audio Hashing D.L. Cui and J.L. Zuo	854
Open Loop Stability on Hybrid Synchronous Motor X.Z. Chen	860
Research on ALA+SPM Rotor Synchronous Motor Direct Torque Control X.Z. Chen	866
Development of Multilayer Situation Decision Support System and its Applications H.C. Wan	872
Research on an Electro-Mechanical Hybrid Power Controller H.S. Zhang	878
Open Courses Education Model and Application Based on Moodle H.Y. Wu	882
The Transient Stability Preventive Control of Power System Based on RBF Neural Network L.L. Yu, B.X. Tan and T.X. Meng	887
Machining Parameter Optimization of Aero-Engine Blade in Electrochemical Machining Based on BP Neural Network Z.Y. Li, H. Ji and H.L. Liu	893
Object Location of a Humanoid Robot Based on Stereo Visual Q.J. Du, Y.B. Liu and X.Y. Zhang	900
Mechanical Design of a Needle Driven Robot Q.J. Du, C.D. Dong and L.L. Ba	905
The Real Solutions of Equation of in Control Theory X.T. Liu	911
An Improved Supercapacitor Model and its Parameter Identification for Wind Power Flow Optimization and Control System Y.L. Zhao, H.D. Li, H.S. Zhang and X.T. Liu	916
The Verification and Validation of Embedded Systems Using Cleanroom Software Engineering	922
Estimates for the Lower Bounds on the Inverse Elements of Strictly Diagonally Dominant Tridiagonal Matrices in Signal Processing C.D. Dong	929
Research of Filtering Based on Wavelet De-Noising Method for Revolution-Modulation North-Finder	, <u>-</u> ,
D.H. Zhao, Y.Q. Han, Z.D. Liu, C.L. Song and D.J. Yang Research on Simulation Platform Architecture for Noise Reduction of Electric Locomotive	934
Wheel S.Q. Ma, W.L. Zhao, Y.N. Li, X.F. Huang, X.P. Wu, X. Chen, L.F. Li and Q.H. Kang	940
The Optimization Research of Geo-Environmental Monitoring Image Fusion Based on Framelet	
X. Li, Y.S. He and X. Zhan Research and Application of SOA-Based Simulation System Used in Hydropower Project	945
D.Y. Meng, L. Wang and Y. Hao	951
A Supervised Clustering Algorithm Based on Representative Points and its Application to Fault Diagnosis of Diesel Engine	050
Y.J. Pang, W. Pan and K.D. Liu Impulsive Control of Permanent Magnet Synchronous Motors	958
Z.H. Li and Y. Liu	964

An Access Control Schema Using Fuzzy Algorithm T. Peng, M.H. Jiang and M. Hu	970
Segmentation Approach Methods in Complex Environment	
H.I. Pai, S.Z. Wang, S.L. Zhao and Y.T. Wu	975
Exergy Analysis of Mine Water Source Heat Pump System J.G. Wang, M.X. Du, C.C. Du and X.X. Gao	980
The Study of Cooling Water Waste Heat Recovery in Chemical Plant by Heat Pump System J.G. Wang, X.X. Gao, B. Liang and H.H. Zhou	986
Synthesizing Pattern with Broad Nulls through Orthogonal Method L.Y. Huang and W.J. Pan	992
Improved Web Text Classification Method for Classifying Quality Safety Accidents S.H. Pan, L. Wang, Y.C. Xu and G.P. Xia	996
Determination and Prediction of Bubble Point Pressure for CO₂-Oil System Y.M. Hao	1002
An Improved Ant Colony Optimization for the Vehicle Routing Problem in Logistics	
Distribution C.M. Qi	1006
Fabric Defects Image Filtering Method Based on Rough Set and PC Neural Networks M. Dong and H.Y. Jiang	1012
State of Art Techniques in En-Route Caching B. Wang and J. Yun	1018
Status Quo and Future: Multimedia Application in Higher Education X.H. Yang	1023
A Novel Soil Moisture Predicting Method Based on Artificial Neural Network and	
Xinanjiang Model J.W. Xu, J.F. Zhao, W.C. Zhang and X.X. Xu	1028
Model Based Automatic Test Research and Application W. Zheng, H.T. Xu and L.S. Guan	1033
Fuzzy Control of a Novel Type of Translational Meshing Motors W. Wang, X.J. Shan and S.M. Wei	1038
The Research of Semi-Fragile Watermarking Algorithm Based on Dynamic Segmentation S.B. Che and X. Shu	1044
A Fragile Information Hiding Technique Based on Human Visual Gray Sensitivity S.B. Che and H.Y. Wang	1048